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ABSTRACT

This report describes the student selection process and its results for the Horizon Program, a magnet program for gifted students conducted in Seattle, Washington public schools in 1978-1979. In the first section various measures used to determine students' creative, academic, intellectual, and leadership capabilities for program admission are outlined. The second section presents demographic characteristics of students, comparisons of age, sex and ethnic group performance on program admission tests, and a discussion of the relation of admission measures to selection decisions. The report concludes with a recommendation that given the role of the Horizon Program in Seattle's desegregation effort, the selection process be critically examined in order to assure equal opportunity for all age, sex and ethnic groups. (APM)

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DESCRIPTIVE ANALYSIS OF THE 1978-79 HORIZON POPULATION AND SELECTION PROCESS

REPORT NO. 79-13
JULY 1979

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DESCRIPTIVE ANALYSIS OF THE 1978-79 HORIZON POPULATION AND SELECTION PROCESS

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JULY 1979

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ABSTRACT

The Horizon program, a magnet offering, was developed to provide specialized instruction for students identified as above the norm in at least one of four areas of giftedness: intelligence, creativity, leadership potential, and academic ability. Unlike other magnets, Horizon uses multiple screening devices to determine eligibility. This report, Descriptive Analysis of the 1978-79 Horizon Population and Selection Process, No. 79-13, contains a description of the process used to select students for the program and reports the results of the selection process as it was applied to students entering the program for the 1978-79 school year. During the 1978-79 year, the Department of Student Services modified the process considerably in efforts to improve time efficiency and to address problems identified in the evaluation study.

The major findings and conclusions resulting from the Horizon selection evaluation study were:

- A significant sex difference was found on two selection measures when all Horizon applicants were considered and on an additional two measures when only qualified applicants were considered. These findings suggest the need for some adjustment of the selection process to achieve comparability of treatment for the two sexes.

- A large number of significant differences on selection measure scores were found when the means of the three ethnic groups (White, Asian, and Black/Other) were compared. This finding provides some justification for the practice of using different eligibility criteria for different ethnic groups if a major goal of the Horizon program is to achieve ethnic representativeness.

- It was found that scores on several of the selection measures were significantly correlated with age. This finding implies the possibility of a differential likelihood of different aged applicants being declared eligible. It would seem desirable to make some adjustment to the selection process that would eliminate this possibility.

- In mathematically replicating the eligibility decision process, it was found that, while scores on all selection measures were presumed to be used in determining eligibility of each applicant, the procedure of ranking applicants separately by ethnic group resulted in a larger number of measures actually affecting eligibility decisions for Whites and Asians than for Blacks/Others. This finding suggests the need to restructure the selection process so that eligibility decisions for different ethnic groups are based on a comparable amount of information.

Based upon the findings of the evaluation study, the following recommendation was offered:

- Given the large number of students served in the District's gifted programs and the importance of the Horizon program in particular to the desegregation effort, it is recommended that the entire gifted program and selection process be critically examined. Such an examination might begin with an articulation of the goals of the program and the selection process, followed by an evaluation of the compatibility of program and process with the goals.

INTRODUCTION AND OVERVIEW

The Horizon program, a magnet* offering, was developed to provide specialized instruction for students identified as above the norm in at least one of four areas of giftedness: intelligence, creativity, leadership potential, and academic ability. Unlike other magnets, Horizon uses multiple screening devices -- two or more measures for each area of giftedness in order to determine eligibility. These measures were selected and administered by the Department of Student Services. An applicant must score at or above a given score on at least one set of measures defining a given area in order to be considered qualified. Because the selection process is the filter through which student applicants must pass in order to qualify, an evaluation of the process was of vital concern. The Office of Instructional Program Evaluation was requested to carry out the evaluation.

It should be emphasized that the findings summarized here apply only to the Horizon selection process in effect through the summer of 1978 and thus to students entering the program for the fall 1978-79 school year. During the 1978-79 year, the Student Services Department modified the process considerably in efforts to improve time efficiency and to address problems identified in the evaluation study.

Over two thousand student applicants have been screened for the 1977-78 and 1978-79 Horizon program. The availability of data on these applicants makes it possible to generate a demographic profile of Horizon students and evaluate the selection process as implemented over the preceding two years. The purpose of this report is to provide a description of Horizon students and summarize the evaluation of the selection process.

The remainder of this report consists of four chapters. The first provides a description and evaluation of the selection measures. (The reader who wishes a more detailed description of the results and the procedures used to obtain them is referred to a working paper available from the Evaluation Office.) This is followed by the results chapter which is divided into four sections. The first section provides a demographic profile of students who have been selected and are now enrolled in the Horizon program. The second section reports findings of group comparisons, and the third discusses correlations between student age and scores on selection measures. The results chapter concludes with an analysis of relative contributions of measures to selection decisions. Conclusions and a recommendation comprise the last portions of this report.

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*The term "magnet", as used throughout this report, refers to one of a set of educational options, some of which were originally developed to attract students for desegregation purposes.

DESCRIPTION OF THE SELECTION PROCESS

Selection Measures

The measures used to select Horizon students for 1978-79 along with the dimensions (intellectual, creative, leadership, and academic) that each was intended to assess are summarized in Table 1. The remainder of this section consists of a more detailed description of each measure.

Parent rating scale. The parent rating scale consisted of items designed to assess three dimensions: intellectual, creative, and leadership. As was the case for all the rating scales used for selection, an item response was indicated on a nine-point scale on which 1 was low and 9 was high. The preliminary directions instructed respondents to regard 5 as average. Parents were also given the option of indicating "don't know" for each item. An example of an item designed to assess the intellectual dimension is:

> "Is alert and very observant. Usually 'sees more' or 'gets more' out of a story, film, song or TV program than others."

An example of an item designed to assess the creative dimension is:

> "Can elaborate; adds to ideas and suggestions, likes to embellish ideas, materials and projects."

An example of a leadership assessment item is:

> "Organizes and directs others in order to accomplish a common goal."

Teacher rating scale. Both the content and scoring of the teacher rating scale were similar to those of the parent rating scale. For high school students, an effort was made to obtain a rating scale from both the Language Arts and the Mathematics teachers. Multiple teacher rating scales were averaged to obtain a single teacher rating on each of the three dimensions.

Self rating scale. Some secondary students rated themselves on a separate copy of the parent rating scale. Self rating scales were averaged with parent rating scales and could not be analyzed separately.

Interviewer rating. Each Horizon candidate was interviewed by a Student Services Specialist in a structured format. Based on the questions asked in the interview, the interviewer rated each candidate on each of four nine-point scales: intellectual, creative, leadership, and academic.

Stanford-Binet Vocabulary Test. The Stanford-Binet Vocabulary Test was used as a measure of verbal intelligence and was administered by the interviewer. The test consists of a list of words, arranged in order of difficulty, which are read aloud by the interviewer and defined by the applicant. The list was begun with the word corresponding to an age level one year below the

TABLE 1

MEASURES USED FOR HORIZON SELECTION
(1978-79)

	Dimension Assessed			
Selection Measure*	Intellectual	Creative	Leadership	Academic
Parent Rating Scale	X	X	X	
Teacher Rating Scale	X	X	X	
Self Rating Scale	X	X	X	
Interviewer Rating	X	X	X	X
Stanford-Binet Vocabulary	X			
Raven Progressive Matrices (Red Form)	X			
Raven Progressive Matrices (Green Form)	X			
Product Improvement Test		X		
Circles Test		X		
MAT Reading				X
MAT Math				X
PIAT Reading				X
PIAT Math				X

*Grade point average and MAT Vocabulary were also obtained for a small number of applicants. However, the number of students was so small that these measures could not be analyzed.

applicant's age. Six words had to be defined correctly in order to define the applicant's basal mental age. Mental age increments were given for each word correctly defined thereafter. When the applicant missed six words in a row, the test was terminated. The applicant's mental age was that corresponding to the number of words correctly defined. IQ was determined asa function of both mental age and chronological age.

Raven Progressive Matrices (Red and Green Forms). The Raven was used as a measure of non-verbal intelligence and was administered by the interviewer. In this test, each stimulus is a matrix of figures with one figure missing. The applicant was asked to select, from a set of response figures, that which completes the matrix. The applicant was shown a series of matrices, of increasing complexity, and was scored on the number completed correctly. The Red Form differs from the Green Form only in that the Red Form matrices are less complex.

Product Improvement Test. The stimulus for the Product Improvement Test is a drawing of an elephant. The applicant was asked to list as many ways as possible to improve it so that it is a better toy. The applicant was scored for fluency (number of ideas) and flexibility (shifts in content). The two scores were combined to yield a single score. (It should be noted that to the extent that fluency and flexibility are different skills, a measure that combines them is of dubious meaning.)

Circles Test. The Circles Test, a non-verbal measure of creativity, was administered to each applicant by the interviewer. The stimuli for the Circles Test were two pages of circles (six on one page and thirty on the other). The applicant was given the following instructions:

> "In ten minutes, see how many objects or pictures you can make from the circles below and on the next page. The circles should be the main part of whatever you make. With a pencil, add lines to the circles to complete your picture. You can place marks inside the circles, outside the circles, or both inside and outside the circles -- wherever you want in order to make your picture. Try to think of things that no one else will think of. Make as many different pictures or objects as you can and put as many ideas as you can in each one. Make them tell as complete and as interesting a story as you can."

The candidate received four scores, one each for fluency, flexibility, originality, and elaboration. The four scores were totaled to arrive at a single Circles Test score. (As was noted in the description of the Product Improvement Test, the practice of combining measurements of qualitatively different skills yields a measure of questionable meaning.)

Metropolitan Achievement Test (MAT). Applicants' most recent regularly administered MAT was used as one measure of academic achievement. In many cases, particularly for applicants in grades K through 2, MAT scores were unavailable. In such cases, the Peabody Individual Achievement Test (see description below) was administered. Where MAT data were available, Reading and Mathematics scores were recorded. Scores were reported in percentile units.

Peabody Individual Achievement Test (PIAT). Unlike the MAT, the PIAT is an individually administered achievement test. Like the MAT, scores were reported in percentile units. The PIAT was administered primarily to applicants who lacked recent MAT scores, although in a few instances it was given in addition to the MAT. From these few instances it was possible to calculate the correlation (an index of the degree to which two tests measure the same dimension) between the MAT and PIAT. For reading, the correlation was quite high; for math, the correlation was quite low. This finding suggests that the practice of treating the PIAT and the MAT as interchangeable is more appropriate for reading than for math.

Selection Process

Data collection. Data collection began at the time the Department of Student Services received a copy of the Horizon application form. A rating scale was then sent to the parent together with a letter of description and a Permission for Assessment slip. Also, a letter was sent to the applicant's school which was requested to supply the most recent MAT percentile score. In addition, rating scales were sent to be filled out by the applicant's teacher and a special rater. If the applicant was in high school, it was requested that both his/her Language Arts and Mathematics teacher complete the rating scale. Finally, the Department of Student Services arranged for an appointment for a screening interview with the applicant. At the time of the interview, psychometric data (Circles Test, Raven Progressive Matrices Test, Box Test, and Stanford-Binet Vocabulary Test) were obtained. With some few exceptions, applicants were administered all of these measures.

Scoring of dimensions. Scores on all selection instruments were converted to a nine-point scale score. Thus, for example, the MAT Reading percentile scores were converted to nine-point scale scores by the following rule:

Percentile Score	Nine-Point Scale Score
0-60	1
61-65	2
66-70	3
71-75	4
76-80	5
81-85	6
86-90	7
91-95	8
96-99	9

The score on a given dimension (intellectual, academic, creative, or leadership) was obtained by adding nine-point scale scores on all selection instruments assessing that dimension. Thus each candidate earned four scores, one for each of the four dimensions. These raw scores were then converted to standard scores.

After standard scores were calculated, twelve standard score distributions were constructed, one for each of the three ethnic groups (White, Black/Other, and Asian*) on each of the four dimensions. Cutoff scores on each dimension (intellectual, creative, leadership, academic) were determined so that a fixed percent of applicants from each ethnic group would be found qualified. Efforts were made to insure that this percent was the same for each ethnic group. Assuming these efforts were successful, the lack of correspondence between percentage of each ethnic group enrolled in Horizon and Districtwide ethnic percentages (noted in Table 2 in the demographic section of this report) must be due to the ethnic composition of the applicant pool.

*Ethnic categories are those used by the Horizon Selection Office. The number of "Others" included with Blacks was so small, estimated at less than 20, that it was felt that a separate category was not warranted. In the remainder of this report, this group is referred to as "Black/Other".

RESULTS

Student Demographic Characteristics

Demographic information on all students enrolled in the Horizon program in fall, 1978 was obtained from the Student Placement Activity Master File and the Bilingual File. The major findings were as follows.

- There is a higher percentage (53.6%) of males in Horizon as compared with other magnets (47.9%) and the total District (51.3%).

- Minorities other than Asian Americans are under represented in the Horizon program relative to other magnets and to the total District. Magnets other than Horizon appear to have attracted a large percentage of Blacks. Table 2 gives the number and percentage of each ethnic group who were enrolled in Horizon, magnets other than Horizon, and the total District as of December, 1978. The possibility that these percentages reflect peculiarities in the ethnic distribution of the applicant pool was suggested earlier in the report.

- There are more (76.2%) students from intact family homes (both parents present) in Horizon as compared with other magnets (53.2%) and the total District (62.7%).

- There are relatively few Horizon students who are considered to be bilingual*. The percentage of bilingual speakers among Horizon students is 1.9 while the percentage for the total District is 9.5. All Horizon bilingual speakers are classified as being at least as proficient in English as in the other language.

Comparison of Selected Groups

Three types of groups were compared on the basis of their performance on the selection measures: qualified versus nonqualified, boys versus girls, and Whites versus Asians versus Blacks/Others. The choice of these three types of groups was motivated by the logic that: (1) qualified applicants should perform significantly better than nonqualified applicants; (2) the presence of significant sex differences favoring one sex on a number of measures might indicate the need for some adjustment of the selection and/or instruction process; and (3) the presence of significant ethnic group differences might

*A bilingual student is one whose primary home language is other than English.

TABLE 2

ETHNIC DISTRIBUTION OF HORIZON, OTHER MAGNETS,
AND TOTAL DISTRICT STUDENTS
(DECEMBER 1978)

	Horizon		Other Magnets		Total District	
Ethnic Group	Number	Percent	Number	Percent	Number	Percent
Asian American	185	15.0	355	7.2	5,845	10.9
Black*	172	13.9	1,445	29.4	10,698	19.9
Hispanic	18	1.5	229	4.7	2,129	4.0
Native American	7	0.6	203	4.1	1,577	2.9
White	855	69.1	2,686	54.6	33,557	62.4
Total	1,237	100.1	4,918**	100.0	53,806**	100.1

* Black, in this case, refers to Blacks only.

** One "other magnet" and 69 total District students were not be identified by ethnic group in the Student Placement Activity Master File. These students were omitted.

provide justification for the practice of using different eligibility criteria for different ethnic groups if a major goal of the Horizon program is to achieve ethnic representativeness. Data for making the three types of comparisons were obtained for the most part on 1978-79 applicants. Data on 1977-78 applicants was analyzed only on the three measures (Stanford-Binet Vocabulary, MAT Reading, and MAT Math) that were used for selection for both 1977-78 and 1978-79 in order to provide information on the comparability of groups (both total applicant and those selected) from one year to the next.

1978-79 Data

The results of the analyses designed for group comparisons are summarized below.

Qualification Status. Qualified applicants scored significantly higher than nonqualified applicants on all measures except Parent Creativity Rating, Parent Leadership Rating, Red Raven, Green Raven, Product Improvement, and Circles. For all but one of these latter measures the difference between the two groups was nonsignificant; for the Red Raven, the difference was significant but in the direction of higher scores for nonqualified applicants. In attempting to interpret the results with the Red Raven, two other findings should be noted. The correlation of the Red Raven (a nonverbal intelligence measure) with the Stanford-Binet (a verbal intelligence measure) was significant and negative. Also, qualified applicants scored significantly higher than nonqualified applicants on the Stanford-Binet. Thus it seems that the selection process has favored verbal intelligence over non-verbal intelligence.

Sex. When all applicants were considered, a significant sex difference was found on two measures. Boys scored higher than girls on the Parent Creativity Rating and girls scored higher than boys on PIAT Reading. These differences remained significant when only qualified applicants were considered and two additional significant differences were found: boys scored higher than girls on the Teacher Creativity Rating and girls scored higher than boys on the Interviewer Academic Rating.

The finding of a significant sex difference on some of the measures should be cause for some concern. When all applicants are considered and a significant sex difference is found, there is a possibility that one sex is favored over the other in the eligibility decision making process. When only qualified applicants are considered and a significant sex difference is found, it may imply that instruction directed to one sex's constellation of abilities is inappropriate for the other's. The latter implication suggests the need to provide Horizon teachers with a summary of the results of each student's performance during the selection process. Access to such a summary might enable teachers to take into account the individual student's strengths and weaknesses when designing an instructional program.

Ethnic group. A large number of significant ethnic group differences were found which provides justification for the practice of using different eligibility criteria for different ethnic groups, if a major goal of the Horizon program is to achieve ethnic representativeness. When the means of the

three ethnic groups, White, Asian, Black/Other, were compared, five patterns of difference emerged. The frequency with which each pattern occurred varied depending on whether all applicants or only qualified applicants were considered.

- For all applicants:

  (1) No significant difference amoung groups (first pattern) was found on eight measures: all six parent and teacher rating scales, Product Improvement, and Interviewer Leadership Rating.

  (2) The second pattern was a significant difference between Whites (highest mean) and Blacks/Others (lowest mean) but not between Whites and Asians (intermediate mean) or between Asians and Blacks/Others. This occurred on five measures: Interviewer Intelligence Rating, Red Raven, Green Raven, Interviewer Creativity Rating, and PIAT Reading.

  (3) The third pattern was a significant difference between Whites (highest mean) and Blacks/Others (lowest mean) and between Asians (intermediate mean) and Blacks/Others but not between Whites and Asians. This occurred on three measures: Stanford-Binet Vocabulary, MAT Reading, and MAT Math.

  (4) The fourth pattern was a significant difference between Asians (highest mean) and Blacks/Others (lowest mean) and between Whites (intermediate mean) and Blacks/Others but not between Asians and Whites. This occurred on two measures: Interviewer Academic Rating and PIAT Mathematics.

  (5) The fifth and last pattern was a significant difference between Asians (highest mean) and Blacks/Others (lowest mean) and between Asians and Whites (intermediate mean) but not between Blacks/Others and Whites. This occurred on the Circles Test.

- When only qualified applicants were considered, the pattern of differences among ethnic groups changed for four measures. The differences became nonsignificant on Interviewer Creativity Rating and PIAT Reading. A significant difference between Whites (highest mean) and Blacks/Others (lowest mean) but not between Whites and Asians (intermediate mean) or between Asians and Blacks/Others was found for Stanford-Binet Vocabulary and Interviewer Academic Rating.

Comparison of 1977-78 and 1978-79 Means

All applicants. Scores on the Stanford-Binet Vocabulary, MAT Reading, and MAT Math for all 1977-78 applicants were compared with scores on the same measures for all 1978-79 applicants. Separate comparisons were made for each of the three ethnic groups, White, Asian, and Black/Other. The 1978-79 Asian applicants scored significantly higher on the Stanford-Binet Vocabulary and significantly lower on the MAT Math than the 1977-78 Asian applicants. White applicants for 1978-79 scored significantly lower on the MAT Reading than

1977-78 applicants. No significant differences were noted when Black/Other 1977-78 applicants were compared with Black/Other 1978-79 applicants.

Qualified applicants only. When only qualified applicants for the two years were considered, the only difference that was significant was that between the two Asian groups' Stanford-Binet Vocabulary scores; the 1978-79 qualified Asian applicants scored higher than the 1977-78 qualified Asian applicants. Thus it seems that, with the exception of Asians, students who were judged qualified for Horizon for 1977-78 were not different on IQ, reading achievement, and math achievement from those judged qualified for 1978-79. Asian students who were judged qualified for Horizon for 1978-79 had higher IQ's, on the average, than Asian students who were judged qualified for 1977-78.

Correlations with Age

During the course of this evaluation, it was suggested that scores on the selection measures might be significantly correlated with chronological age. This possibility is of concern because a significant positive correlation between scores on a selection measure and age implies that younger applicants tend to do less well than older applicants while a significant negative correlation implies that older applicants tend to do less well than younger applicants. To the extent that the score on a selection measure contributes to a candidate's eligibility, a significant correlation with age implies differential likelihood of different aged applicants being declared eligible.

It was found that scores on several measures correlated significantly with age. Table 3 gives those correlations whose absolute value exceeds .20.* Correlations were calculated separately for each ethnic group.

These correlations with age have implications for present and future selection. Unless adjustment is made for age, those measures on which there is a positive correlation with age will tend to discriminate against younger applicants and those measures on which there is a negative correlation with age will tend to discriminate against older applicants. There is no reason to expect that these divergent effects would balance out to produce an age-free system.

Because of the problem associated with the correlation of some of the selection measures with age, it was recommended that scores on those measures that show a significant correlation with age be corrected to remove the effect of age. Response to this recommendation is implied by one of the key position statements of the Steering Committee for Gifted and Talented (Seattle Gifted and Talented Education Program, Policy and Management Study, March, 1979): "A single identification model will use different procedures, instruments, and criteria for different age/grade groups."

*A correlation coefficient can range in value from -1.0 to 1.0. A large positive correlation coefficient indicates a strong positive linear relationship between two variables (large values of one variable are associated with large values of the other variable); a large negative correlation coefficient indicates a strong negative linear relationship (large values of one variable are associated with small values of the other variable). A correlation of 0 indicates that the two variables are not at all linearly related. A correlation of .20, while not large, is indicative of a significant relationship between age and the variable in question.

TABLE 3

CORRELATIONS WITH AGE BY ETHNIC GROUP
(MARCH 1979)

Selection Measure	White	Asian	Black/ Other
Stanford-Binet Vocabulary	-.63	-.66	-.26
Red Raven	.65	.72	.42
Green Raven	.65	.38	.24
Product Improvement	.28		
Interviewer Creativity Rating		.40	
Interviewer Leadership Rating		.27	
MAT Reading		-.43	-.45
MAT Math			-.29
PIAT Reading			-.38
PIAT Math			-.21

Relative Contribution of Measures to Selection Decisions

The final step in the evaluation of the selection process was to apply a technique* designed to determine the relative contribution of each selection measure to decisions concerning applicants' eligibility. Using this technique, it is possible to order the selection measures in terms of their relative importance to decision making. It should be noted that the technique was applied to data from applicants for 1978-79 so that the ordering reported here reflects the decision making process in operation at that time.

As was noted in a preceding section, Whites and Blacks/Others differed significantly on most of the selection measures. For this reason two initial analyses were performed, one for Whites and one for Blacks/Others. A separate analysis for Asians could not be conducted because of an insufficiant number of cases. Instead, two secondary analyses were performed, one in which Asians were grouped with Whites and one in which Asians were grouped with Blacks/Others. It was felt that this approach would permit a decision as to which grouping is more appropriate; i.e., which grouping best preserves the results of the initial analyses.

When the analysis was conducted grouping Asians with Whites the results were very like those obtained with Whites only. This similarity was not obtained when Asians were grouped with Blacks/Others. For this reason, as well as because of the greater similarity of Asian and White means found in the section on the comparison of selected groups, it was decided to include Asians with Whites in presenting the results. The results for Whites and Asians are presented in the second column and the results for Blacks/Others are presented in the third column of Table 4.

As can be seen from Table 4, there appear to have been two quite different decision making processes in operation for Whites and Asians on the one hand and Blacks/Others on the other. While this may not be undesirable in itself, it may be of some concern that the amount of information used in making decisions concerning Black/Other applicants may not always be comparable to that used for White and Asian applicants. The technique used to generate the information presented in Table 4 can also be used to produce a mathematical function of the selection measures that best predicts membership in one of two groups, applicants determined to be qualified and applicants determined to be nonqualified according to the criteria used to select applicants for 1978-79. Insofar as it is desirable to retain these criteria, such a function could be used for deciding whether a new applicant is qualified or nonqualified by substituting his/her scores on the selection measures into the function and observing whether the result more closely matches that for the qualified group or the nonqualified group. Such a function was in fact presented and

*The technique was discriminant analysis; by which two or more groups (in this case, applicants judged to be qualified and applicants judged to be nonqualified) can be distinguished on the basis of their scores on a set of variables (the selection measures). A weighted linear function of the variables is formed with the weights chosen in such a way as to maximize the separation between the groups. By looking at the relative magnitude of the weights, it is possible to determine which variables contribute most to discrimination.

TABLE 4

ORDERING OF SELECTION MEASURES BY RELATIVE CONTRIBUTION TO ELIGIBILITY DECISIONS (JUNE 1979)

Selection Measure*	Whites and Asians	Blacks/Others
Reading Achievement**	1	1
Math Achievement**	2	
Stanford-Binet Vocabulary	3	2
Circles	4	5
Interviewer Intelligence Rating	5	
Red Raven	6	
Green Raven		4
Product Improvement	7	
Interviewer Leadership Rating	8	
Interviewer Creativity Rating		3
Teacher Intelligence Rating		6

*Selection measures that did not contribute significantly to decision making are omitted.

**The achievement score is either MAT or PIAT or (MAT + PIAT)/2 if both were present.

recommended for use with reservations. (See working paper cited at the beginning of this report.) However, it was decided by the Department of Student Services that it was not desirable to retain the decision making system that was operative in selecting applicants for 1978-79. This decision was prompted by a consideration of the limitations of this system, as revealed by the analyses reported here, and a desire for a more efficient, less costly process that uses fewer selection measures. (The working paper contains a memorandum from the Director of the Department of Student Services in which the rationale for this decision is more fully stated.)

CONCLUSIONS

A significant sex difference was found on two selection measures when all Horizon applicants were considered and on an additional two measures when only qualified applicants were considered. These findings suggest the need for some adjustment of the selection process to achieve comparability of treatment for the two sexes.

A large number of significant differences on selection measure scores were found when the means of the three ethnic groups (White, Asian, and Black/Other) were compared. This finding provides some justification for the practice of using different eligibility criteria for different ethnic groups if a major goal of the Horizon program is to achieve ethnic representativeness.

It was found that scores on several of the selection measures were significantly correlated with age. This finding implies the possibility of a differential likelihood of different aged applicants being declared eligible. It would seem desirable to make some adjustment to the selection process that would eliminate this possibility.

In mathematically replicating the eligibility decision process, it was found that, while scores on all selection measures were presumed to be used in determining eligibility of each applicant, the procedure of ranking applicants separately by ethnic group resulted in a larger number of measures actually affecting eligibility decisions for Whites and Asians than for Blacks/Others. This finding suggests the need to restructure the selection process so that eligibility decisions for different ethnic groups are based on a comparable amount of information.